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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,430	06/30/2003	Wolfgang Heikamp	037141.51861US	7164

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EXAMINER
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PHAM, MINH CHAU THI

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 02/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/608,430	HEIKAMP, WOLFGANG	
	<b>Examiner</b>	<b>Art Unit</b>	
	Minh-Chau T. Pham	1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-12 and 15 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Bayerlein et al (6,153,098).

Bayerlein et al disclose a filter element for filtering a gas stream comprising at least one filter mat (col. 1, lines 36-44) positioned in the gas stream to which particles in the gas stream can adhere and be removed from the gas stream, wherein at least one filter mat comprises a plurality of layers of a filter material (col. 6, lines 31-39) and a membrane (col. 8, lines 64-65) disposed between the layers. Bayerlein et al further disclose the filter mat comprising a multi-layered of fiber glass fiber paper (col. 6, lines 31-39; col. 8, lines 54-58), the membrane can be TEFLON® (col. 8, lines 63-65), and the filter mat winding around a hollow cylinder and mounted on a perforate central tube (col. 2, lines 20-24) so that the gas stream flows radially through the filter element from the outside in and exits the filter element axially from the center of the cylindrical filter element. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a multi-layered filtration media as taught by Bayerlein et al to provide an improved apparatus for filtering fluid that is particularly useful for filtering lubrication oil or other fluids.

Claims 13 and 14 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Bayerlein et al (6,153,098), in view of either Cox et al (6,524,360 B2) or Benson et al (6,746,517 B2).

Claims 13 and 14 call for the membrane including at least one layer of nanofiber material. Cox et al disclose a membrane for a filter media wherein the polymer fiber web layer(s) can be made from a variety of polymeric materials such as polypropylene, polyester, polyamide and polyethylene (col. 2, lines 52-55) wherein the fibers formed from the web having a diameter in the range of about 1 to 15 micrometers, preferably about 3 micrometers and the weight of the polymer fiber web is in the range of about 10 to about 100 g/m<sup>2</sup>, preferably about 35 g/m<sup>2</sup> (col. 2, lines 57-61). Benson et al disclose the membrane for filter media can be formed with polymeric compositions in the form of fine fiber such as nanofibers in the form of filter webs or fibrous mats used in a unique improved filter structure (col. 2, lines 56-59). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a membrane made of nanofiber such as polyamide as taught either by Cox et al or Benson et al in the filter apparatus of Bayerlein et al since it is well known in the art that filter media made of nanofibers would enhance filtration performance characteristics.

#### ***Response to Amendment***

Applicant's arguments filed on November 12, 2004 have been fully considered but they are not persuasive.

Applicant argues that none of the cited prior arts do "not mention the word 'membrane' disposed on the filter layer". The Examiner respectfully disagrees. Bayerlein clearly discloses that "as those of ordinary skill in the art are aware, filter media (52) which are appropriate may include cellulose acetate, nylon, Teflon or polycarbonate" (see col. 8, lines 63-65). This statement inherently means that the filter

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media may include a layer or "membrane" (in Applicant's language) of Teflon as those ordinary skill in the art are aware of. In addition, according to the Webster Ninth New Collegiate Dictionary, on page 740, the word "membrane" is defined as "a thin soft sheet or layer", and per Applicant's admission in the specification on page 3, lines 11-14, "the membrane may be made from any suitable material. For example, the membrane may be made from a highly porous polymer. In some applications, the suitable materials may include one or more of polysulfone, polyethersulfone, Teflon, polyether, polypropylene, polyester and mixed esters". So, basically from Applicant's admission it is clear that "membrane" is a thin soft layer of Teflon disposed on a filter medium, which Bayerlein clearly discloses.

Applicant's arguments with respect to claims 1-15 have been thoroughly considered but are moot in view of the rejection as discussed above.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh-Chau T. Pham whose telephone number is (571) 272-1163. The examiner can normally be reached on Mon/Tues/Thur/Fri 7:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**Minh-Chau Pham**  
**Patent Examiner**  
**Art Unit: 1724**  
**February 1, 2005**